

## **WOOD SHINGLE PANEL WITH REAR TRANSVERSE METAL SLAT**

### **FIELD OF THE INVENTION**

5           The present invention relates to a wood shingle panel for use to cover a wall or a roof, which panel comprises a plurality of wood shingles held in parallel adjacent relationship by means of a rear transverse metal slat.

### **BACKGROUND OF THE INVENTION**

10           It is of common practice in the construction industry to use wood shingle panels comprising a plurality of wood shingles that are positioned in adjacent relationship to form a row and are held in such a position by means of a rear backing board or slat nailed or glued to them. As non-restrictive examples of such wood shingle panels, reference can be made to the following U.S.  
15   patents:

4,050,209 of 1977 (SHAKERTOWN CORP.);  
4,102,107 of 1978 (SHAKERTOWN CORP.);  
4,586,309 of 1986 (FERGUSON S.); and  
4,782,639 of 1988 (FERGUSON S.).

20           As to the utility and advantages of such panels, reference can also be made to the same patents.

          A first problem with these existing wood shingle panels lies in that they make use of a backing board or slat made of wood that has to be nailed or glued to the rear surfaces of the wood shingles after the same have been  
25   positioned in a row. Such is time consuming and increases the cost of the resulting product.

          Another problem with the existing wood shingle panels is that their backing board or slat made of wood are of rectangular cross-section and may be used to hang one panel above another one with the backing board or slat of  
30   the upper panel bearing out the top edges of the shingles of the lower panel. However, such a "hanging" is not really secure since the panels are not "hooked" to each other in such a position. Thus, the upper panel may

sometimes fall down by inadvertence.

A further problem with the existing wood shingle panels is that their backing boards or slats made of wood may be subject to deformation especially in the presence of humidity.

5               Such may then cause deformation to the whole panels.

### **SUMMARY OF THE INVENTION**

It has now been discovered that the above mentioned problem of manufacture may easily be solved if, instead of using a backing board or slat  
10   made of wood as it has been done so far, use is made of a slat made of metal that has, prior to being used, be punched to form a plurality of spikes projecting outwardly on one side of the slat in such a way as to be used as "nailing means". Thus, one has just to press the so punched slat onto the row of wood shingles to connect them together to form the requested panel. As may be  
15   appreciated, such a pressing can be automatized on a conveyor, whereby a substantial reduction in the manufacturing cost is achieved.

It has also been discovered that the above mentioned problem of stability may be solved by giving an inverted U-shape to the upper edge of the metal slat and by sizing this inverted U-shape upper portion of the slat in such a  
20   manner that it may receive and hook onto the top edges of the shingles of a similar panel positioned below.

It has further been discovered that the problem of deformation of the panel in the presence of humidity may also be solved when use is made of a backing slat that is made of metal, inasmuch as such a slat is not subject to  
25   deformation due to humidity.

Thus, the object of the present invention essentially lies in a wood shingle panel of a given length for use to cover a wall or a roof, this panel comprising a plurality of wood shingles positioned in adjacent relationship to form a row that extends over the given length, the wood shingles having top  
30   edges that are in line along the given length, the wood shingles being attached to a slat that extends along the given length at a given distance below the top edges of the wood shingles rearwardly of said wood shingles.

This panel is improved as compared to the existing ones in that its slat consists of a metal sheet of inverted J cross-section. This metal sheet has a main wall punched in such a way as to form a plurality of spaced apart spikes, which spikes act as nails to attach the wood shingles onto the slat when the main wall of said slat is applied and pressed onto the row formed by said wood shingles. The metal sheet also has an inverted U-shaped top wall that projects externally on top of the main wall when the wood shingles are attached to it. This inverted U-shaped top wall is sized to receive and hook onto the top edges of the wood shingles of a similar wood shingle panel positioned below.

Preferably, the top edges of the wood shingles are covered by a connector that extends along the row over the length of the panel.

The invention and its advantages will be better understood upon reading the following non-restrictive description of a preferred embodiment of the invention, made with reference to the accompanying drawing.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

Figure 1 is a perspective view of a portion of a roof covered by a plurality of wood shingle panels according to a preferred embodiment of the invention;

Figure 2 is a side view of the portion of the roof covered with wood shingle panels, as shown in Figure 1;

Figure 3 is a side elevational view showing how the wood shingle panels as shown in Figures 1 and 2, may be hooked to each other;

Figure 4 is a rear elevational view of the wood shingle panels shown in Figure 3, in spaced apart position relative to each other;

Figure 5 is a rear perspective view of the wood shingle panels shown in Figures 3 and 4;

Figure 6 is a rear perspective view of the wood shingle panels shown in Figure 3, after they have been hooked to each other;

Figures 7a to 7c are partial perspective views of a portion of the upper edge of a wood shingle panel according to the invention showing three different types of connectors for covering the top edges of the shingles,

respectively; and

Figure 8 is a perspective view of a portion of the metal slat used to manufacture the wood shingle panels shown in the previous Figures, this view showing the way this slat may be punched to form spikes.

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# **DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT OF THE INVENTION**

The wood shingle panel 1 according to the preferred embodiment of the invention as shown in the accompanying drawings, is intended to be used to cover a wall or a roof 3. This panel 1 comprises a plurality of wood shingles 5 positioned in adjacent relationship to form a row that extends over a given length. The wood shingles 5 have top edges that are in line along the given length. The wood shingles 5 may have the same width or they may have different widths, as is shown in the drawings. They preferably have a tapering side shape with a thickness that increases from their top edges down to their bottom edges, as is also shown in the drawings. However, they may also have a constant thickness. Such is actually well known in the art and has not to be further described.

Like in all the existing wood shingle panels, the wood shingles 5 of the panel 1 according to the invention are attached to a slat 7 that extends along the given length of the panel at a given distance below the top edges of the wood shingles rearwardly of the same. The major difference with the existing panels is that, instead of being made of wood, the slat 7 consists of a metal sheet of inverted J-shaped cross-section having a main wall 9 punched in such a way as to form a plurality of spaced part spikes 11 (see, in particular, Figure 8). The spikes 11 act as nails to attach the wood shingles 5 onto the slat when the main wall 9 of this slat is applied and pressed onto the row formed by the wood shingles 5. The metal sheet of inverted J-shaped cross-section also has an inverted U-shaped top wall 13 that projects externally on top of the main wall when the wood shingles are attached to it. This inverted U-shaped top wall 13 is sized to receive and hook onto the top edges of the wood shingles of a similar wood shingle panel positioned below, as is shown in Figures 1, 2 and 6.

To facilitate such a hooking, the top edges of the wood shingles 5 may be covered by a connector 15 that extends along the row over the length of the panel. As shown in Figure 7a, the connector 15 may consist of a metal sheet of inverted U-shape, which can also be punched to form nailing spikes. Alternatively, as shown in Figure 7b, the connector 15 may consist of a self-adhesive strip applied onto the top edge.

In all cases, the use of such a connector 15 is not compulsory, as is shown in Fig. 7c. However, such a use is interesting in that it "forces" the top edges of all the wood shingles 5 to be in line and thus ready to fit into the inverted U-shaped top wall 13 of the slat 7 of another similar panel 1 when said other panel is installed above it (see the dotted lines in Figure 3).

In use, the wood shingle panel 1 according to the invention can be installed with other similar panels onto a roof or a wall, in the very same manner as the existing panels. In this connection, reference can be made again to the above mentioned U.S. patents cited as relevant background.

However, as aforesaid, a first advantage of the panels 1 according to the invention as compared to the existing ones, is that they are much easier to manufacture, thanks to their slats 7 made of metal that has, prior to being used, been punched to form a plurality of spikes projecting outwardly on one side of the slat in such a way as to be used as "nailing means". Thus, one has just to press the so punched slat onto the row of wood shingles to connect them together to form the requested panel. As aforesaid too, such a pressing can be automatized on a conveyor, whereby a substantial reduction in the manufacturing cost is achieved.

A second advantage of the panels 1 according to the invention is that, by giving an inverted U-shape to the upper edge of their metal slats 7 and by sizing this inverted U-shaped upper portion of the slats in such a manner that it may receive and hook onto the top edges of the shingles of a similar panel positioned below, one may easily install one panel above another one, with a minimum of risk that the upper panel falls down by inadvertence because it has been "hooked" badly to the lower one, while the person in charge of the installation is moving, installing other panels or hooking the same to the roof or

wall.

A third advantage of the panels 1 according to the invention is that their slats 7 made of metal are not subject to deformation in the presence of humidity. The wood singles 5 may be subject to such a deformation, but such  
 5 does not cause any problem inasmuch as they are held onto the slats 7 by means of spikes 11 punched therein, which, contrary to conventional nails or glue, may "fold" in one direction or another in the case of a shingle deformation.

From a practical standpoint, the wood shingle panel 1 according to the invention can be of any length and/or height. Prototypes made by the  
 10 Applicant for test purposes actually had wood shingles 5 with a height of about 15" and the metal sheet used as their slat was nailed at such a height onto the rear of the row of wood shingles as to leave a height "h" about 5" free at the bottom of a similar panel when hooked onto it (see Figure 2).

To start the installation of the wood shingle panels 1 onto a roof or  
 15 wall, use can be made of "starting" panels, as it is also the case before with the existing wood shingle panels.

The wood shingle panels 1' useful to start assembly of the panels 1 in an upwardly extending direction are also shown in the drawings. They comprise a plurality of wood shingles 5' positioned in adjacent relationship to  
 20 form a row that extends over a given length. The wood shingles 5' have top edges that are in line along the given length, and they are attached to a slat 7' consisting of a metal sheet having an inverted L-shaped cross-section 9' that fit onto and is attached to the top edges of the wood shingles. The metal sheet forming the slat 7' also has an upwardly projecting flat portion 13' that is devised  
 25 to fit into the inverted U-shaped top wall(s) of the wood shingle panel(s) 1. Preferably, the main wall of the inverted L-shaped of portion 9' is punched to form a plurality of spikes 11' that may be used as "nailing means". Thus, the panels 1' are as easy to manufacture as the panels 1. If desired, another punched slat 17' may also be attached close to the bottom edges of the wood  
 30 shingles 5' for the purpose of stability.

Of course, the panels 1 and 1' may be sold as a kit for use to cover a wall or a roof.

As may be appreciated, numerous modifications could be made to the wood shingle panels 1 and 1' disclosed hereinabove without departing from the scope of the invention as defined in the appended claims.